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10/675,720

09/29/2003

Michelle D. Fabian

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10/18/2004

CORNING INCORPORATED

SP-TI-3-1

CORNING, NY 14831

EXAMINER

KIM, JOANNE H

ART UNIT

PAPER NUMBER

2883

DATE MAILED: 10/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/675,720

Applicant(s)

FABIAN ET AL.

Examiner

Joanne H. Kim

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2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____   | 6) <input type="checkbox"/> Other: ____                                     |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-7, 11-16 and 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over "Reliability of the adhesion of the Glass-Primary Coating Interface on Optical Fibers" by Murata et al. (hereinafter "Murata").

2. Regarding claims 1-5, 15 and 22-23, Murata discloses a coated optical fiber comprising: an optical fiber having a core and a cladding; a hydrophilic primary coating having a Young's modulus less than about 2 MPa encapsulating the optical fiber, the primary coating; and a secondary coating encapsulating the primary coating (page 322, second column).

Further, Murata discloses that the primary coating with low water content exhibits substantially no delamination and no decrease in pullout force 1) when the coated optical fiber is soaked in room temperature water for 30 days (Fig. 8); 2) when the coated optical fiber is soaked in hot water (60°C) for 60 days (Fig. 7); and 3) when the coated optical fiber is exposed to humid atmosphere (60°C, 95% RH) for 30 days (Fig. 9).

Murata does not specifically disclose that the primary coating exhibits substantially no water bubble formation when the coated optical fiber is soaked in

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water at 23°C for 30 days and when the coated optical fiber is soaked in water at 65°C for 60 days. Murata also does not specifically disclose that the primary coating has average water absorption of at least about 4% and that the coated optical fiber has a dry pullout value of at least about 1 pound force.

However, it is inherent that the primary coating exhibits substantially no water bubble formation when the coated optical fiber is soaked in room temperature water for 30 days and when the coated optical fiber is soaked in water at 60°C for 60 days, since the primary coating exhibits substantially no delamination and no decrease in pullout force.

Further, MPEP 2144.05 states that "differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indication such concentration or temperature is critical. '[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation,' *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). " It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Accordingly, it would have been obvious to one skilled in the art to soak the coated optical fiber in water at 23°C, instead of water in room temperature, for 30 days and in water at 65°C, instead of 60°C, for 60 days. Further, since the primary coating exhibits substantially no water bubble formation and no delamination when the coated optical fiber soaked in water at 65°C for 60 days, it

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would have been obvious to one skilled in the art that the primary coating exhibits an average of less than about 20 water bubbles 1 m or greater in diameter when the coated optical fiber is soaked in water at 65°C for 60 days. Furthermore, It would have been obvious to one having ordinary skill in the art to use a primary coating having an average water absorption of at least about 4% and a coated optical fiber having a dry pullout value of at least about 1 pound force for the reasons set forth above.

3. Regarding claims 6-7, 12, 16 and 21, Murata discloses that strength of an optical fiber with low-water content coatings exposed in a humid environment (60°C, 95% RH) for 30 days did not change, while those soaked in hot water decreased slightly (Figs. 9 and 11).

Murata does not specifically disclose that the coated optical fiber has a 50% failure stress after being soaked in water at 65°C for 14 days that is within 10% of the 50% failure stress before being soaked and that the coated optical fiber has a 50% failure stress after being exposed to 85% relative humidity at 85°C for 30 days that is within 10% of the 50% failure stress before the exposure. Murata also does not specifically disclose that the secondary coating has a ductility of at least about 280  $\mu\text{m}$ .

As stated above in paragraph 2, discovering an optimum value of a result effective variable involves only routine skill in the art.

Accordingly, it would have been obvious that the coated optical fiber has a 50% failure stress after being soaked in water at 65°C for 14 days that is within 10% of the 50% failure stress before being soaked. Further, it would have been

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obvious that the coated optical fiber has a 50% failure stress after being exposed to 85% relative humidity at 85°C for 30 days that is within 10% of the 50% failure stress before the exposure. Furthermore, it would have been obvious to provide a secondary coating having a ductility of at least about 280  $\mu\text{m}$  in order to provide ability to strain past the elastic limit without fracture.

4. Regarding claims 11 and 20, Murata discloses that the coated optical fiber having a dry pullout value at least 1 pound force as discussed above in paragraph 2.

Murata does not specifically disclose that the primary coating is a cured reaction product of a primary curable composition that is substantially devoid of organosilane adhesion promoters.

It is well known that a primary coating of a coated optical fiber is a cured reaction product of a curable liquid coating composition (i.e., primary curable composition). It is also well known that pullout force of a coated optical fiber can be controlled by varying the kind and content of adhesives in a primary coating composition.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a primary curable composition that is substantially devoid of organosilane adhesion promoters, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. Further, it would have been an obvious matter of design choice to use a primary curable composition that is substantially

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devoid of organosilane adhesion promoters, since applicant has not disclosed that the use of the primary curable composition that is substantially devoid of organosilane adhesion promoters solves any stated problem or is for any particular purpose.

5. Regarding claims 13 and 14, it would have been obvious to form an optical fiber ribbon and an optical fiber cable comprising the coated optical fiber according to claim 1 in order to provide improved optical fiber ribbon and optical cable.

6. Claims 8-10 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murata in view of Szum (U.S. Patent Pub. No. 2001/0002410).

Murata discloses the coated optical fiber as discussed above in paragraph

2. Further, it is well known that a primary coating of a coated optical fiber is a cured reaction product of a primary curable composition.

Murata does not specifically disclose that the primary curable composition comprises a polyether, a monomer having a pendant hydroxy group or a monomer having a poly(ethylene glycol) backbone.

Szum discloses radiation-curable optical fiber coating composition. Szum discloses that hydrophilic primary coating is a cured reaction product of a primary curable composition comprising a polyether, a monomer having a pendant hydroxyl group, or a monomer having a poly(ethylene glycol) backbone (paragraphs [0011], [0012], [0047], [0051], [0057], and [0071]).

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It would have been obvious to modify Murata to use a primary curable composition comprising a polyether, a monomer having a pendant hydroxyl group, or a monomer having a poly(ethylene glycol) backbone such as that taught by Szum in order to provide an improved coated optical fiber having a decreased rate of deterioration due to moisture and improved adhesion between the optical fiber and the coating.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joanne H. Kim whose telephone number is (571) 272-2139. The examiner can normally be reached on 8:30 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Joanne H. Kim  
Examiner  
Art Unit 2883

jk/FGF



Frank G. Font  
Supervisory Patent Examiner  
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